IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A data transmitting apparatus comprising:

a command transmission unit configured to transmit a response request command to a data receiving apparatus;

a control unit ~~configure~~ configured to receive a response message to the response request command from the data receiving apparatus, the response message including authentication data based on shared data shared with said data receiving apparatus;

an expected value generation unit configured to generate an expected authentication value based on the shared data and a sequence number, the sequence number indicating a position of the response request command in a sequence of response request commands to be transmitted by the command transmission unit;

an authentication unit configured to produce an authentication result for said data receiving apparatus based on the expected authentication value generated by said expected value generation unit and said authentication data in the response message;

a measurement unit configured to measure a response time between transmitting the response request command and receiving the response message; and

a judgment unit configured to judge if a subsequent data transmission to said data receiving apparatus is granted based on the authentication result and the response time.

Claim 2 (Currently Amended): The data transmitting apparatus recited in claim 1, wherein:

said command transmission unit is further configured to transmit said response request command a maximum of integer N times;

2

said control unit is further configured to receive the response messages from the data

receiving apparatus for each of the N transmitted response request commands; and

said authentication unit is further configured to produce authentication results based

on said authentication data in each received response message.

Claim 3 (Currently Amended): A data transmission method comprising:

transmitting a response request command to a data receiving apparatus;

receiving a response message to the response request command from the data

receiving apparatus, the response message including authentication data based on shared data

shared with said data receiving apparatus;

generating an expected authentication value based on the shared data and a sequence

number, the sequence number indicating a position of the response request command in a

sequence of response request commands to be transmitted to the data receiving apparatus;

producing an authentication result for said data receiving apparatus based on the

expected authentication value and said authentication data in the response message;

measuring a response time between transmitting the response request command and

receiving the response message; and

judging if a subsequent data transmission to said data receiving apparatus is granted

based on the authentication result and the response time.

Claim 4 (Currently Amended): A computer program ~~product having~~ storage medium

storing computer program instructions which when executed by a computer cause the

computer to perform the following steps:

controlling transmission of a command to a data receiving apparatus;

controlling reception of a response message to the ~~response request~~ command from

the data receiving apparatus, the response message including authentication data based on

shared data shared with said data receiving apparatus;

controlling generation of an expected authentication value based on the shared data

<u>and a sequence number, the sequence number indicating a position of the command in a</u>

<u>sequence of commands to be transmitted to the data receiving apparatus</u>;

controlling production of an authentication result for said data receiving apparatus

based on the expected authentication value and said authentication data <u>in the response</u>

<u>message</u>;

controlling measurement of a response time between transmitting the response request

command and receiving the response message; and

judging if a subsequent data transmission to said data receiving apparatus is granted

based on the authentication result and the response time.

Claim 5 (Canceled).

Claim 6 (Previously Presented): A data receiving apparatus configured to receive

data from a data transmitting apparatus which judges whether data transmission is granted

based on authentication data and a response time between sending a response request

command and receiving a response message, the data receiving apparatus comprising:

a command receiving unit configured to receive the response request command from

the data transmitting apparatus;

an authentication data generation unit configured to generate said authentication data

based on shared data shared with the data transmitting apparatus by subjecting said shared

data to a predetermined process before said response request command is received from said

data transmitting apparatus;

a response message generation unit configured to generate the response message to

said response request command before said response request command is received from said

data transmitting apparatus, said response message including said authentication data; and

a transmission unit configured to transmit said response message to said data

transmitting apparatus when said response request command is received from said data

transmitting apparatus.

Claim 7 (Previously Presented): The data receiving apparatus recited in claim 6,

wherein:

said shared data is a quasi random number transmitted from said data transmitting

apparatus before said response request command is transmitted; and

said authentication data generation unit is further configured to subject said quasi

random number to a Keyed-Hash process to produce a Hash value that is used as said

authentication data.

Claim 8 (Previously Presented): The data receiving apparatus recited in claim 6,

wherein:

said authentication data generation unit is further configured to execute a Keyed-Hash

process relative to said quasi random number and information specific to the information

processing apparatus to produce a Hash value that is used as said authentication data.

Claim 9 (Currently Amended): The data receiving apparatus recited in claim 6, wherein:

said command receiving unit is further configured to receive said response request command from said data transmitting apparatus a maximum of integer N times;

said authentication data generation unit is further configured to execute said predetermined process relative to said shared data before a first one of said response request commands is received from said data transmitting apparatus and further configured to generate N sets of said authentication data corresponding to said N received response request commands; and

said transmission unit is further configured to transmit said response message generated by said response message generation unit to said data transmitting apparatus, said response message including the N sets of said authentication data in a sequence agreed beforehand with said data transmitting apparatus.

Claim 10 (Previously Presented): The data receiving apparatus recited in claim 9, wherein:

said authentication data generation unit is further configured to divide the data obtained by subjecting said shared data to said process into a plurality of data pieces and further configured to generate the N sets of said authentication data from the divided data.

Claim 11 (Previously Presented): The data receiving apparatus recited in claim 9, wherein:

said authentication data generation unit is further configured to generate the N sets of said authentication data based on data obtained at each process of repetitively executing said predetermined process relative to said shared data.

Claim 12 (Previously Presented): The data receiving apparatus recited in claim 6, wherein:

said transmission unit is further configured to transmit the response message to said transmitting apparatus when said response request command is received from the data transmitting apparatus, said response message containing new authentication data generated from said authentication data and information contained in said response request command.

Claim 13 (Previously Presented): A data reception method for data receiving apparatus configured to receive data from a data transmitting apparatus which judges whether data transmission is granted based on authentication data and a response time between sending a response request command and receiving a response message, the data reception method comprising:

receiving the response request command from the data transmitting apparatus;

generating said authentication data based on shared data shared with the data transmitting apparatus by subjecting said shared data to a predetermined process before said response request command is received from said data transmitting apparatus;

generating the response message to said response request command before said response request command is received from said data transmitting apparatus, said response message including said authentication data; and

transmitting said response message to said data transmitting apparatus when said response request command is received from said data transmitting apparatus.

Claim 14 (Currently Amended): A computer program ~~product having~~ <u>storage</u> <u>medium storing</u> computer program instructions which, when executed by a computer

configured to receive data from a data transmitting apparatus which judges whether data transmission is granted based on authentication data and a response time between sending a response request command and receiving a response message, causes the computer to perform the following steps:

controlling the reception of the response request command from the data transmitting apparatus;

controlling generation of said authentication data based on shared data shared with the data transmitting apparatus by subjecting said shared data to a predetermined process before said response request command is received from said data transmitting apparatus;

controlling generation of the response message to said response request command before said response request command is received from said data transmitting apparatus, said response message including said authentication data; and

controlling transmission of said response message to said data transmitting apparatus when said response request command is received from said data transmitting apparatus.

Claim 15 (Canceled).

Claim 16 (Currently Amended): An information transmitting apparatus comprising:

an authentication data generation unit configured to generate command authentication data and response expected value data from shared data shared with a data receiving apparatus and a sequence number, the sequence number indicating a position of a response request command in a sequence of response request commands to be transmitted to said data receiving apparatus;

a command transmission unit configured to transmit [[a]] the response request

command to said data receiving apparatus, said response request command containing said

command authentication data;

a response reception unit configured to receive a response message to said response

request command from said data receiving apparatus;

an authentication unit configured to produce an authentication result for said

~~information~~ data receiving apparatus based on said response expected value data and

response authentication data in said response message received from said data receiving

apparatus;

a measurement unit configured to measure a response time between transmitting the

response request command and receiving the response message; and

a judgment unit configured to judge if a subsequent data transmission to said data

receiving apparatus is granted based on the authentication result and the response time.

Claim 17 (Previously Presented): The data transmitting apparatus recited in claim 16,

wherein:

said command transmission unit is further configured to transmit said response

request command a maximum of k times;

said control unit is further configured to receive the response messages from the data

receiving apparatus for each of the N transmitted response request commands; and

said authentication unit is further configured to produce authentication results based

on said authentication data in each received response message.

Claim 18 (Currently Amended): A data transmission method comprising:

generating command authentication data and response expected value data from shared data shared with a data receiving apparatus <u>and a sequence number, the sequence number indicating a position of a response request command in a sequence of response request commands to be transmitted to the data receiving apparatus</u>;

transmitting [[a]] <u>the</u> response request command to said data receiving apparatus, said response request command containing said command authentication data;

receiving a response message to said response request command from said data receiving apparatus;

producing an authentication result for said receiving apparatus based on said response expected value data and response authentication data in said response message received from the data receiving apparatus;

measuring a response time between transmitting the response request command and receiving the response message; and

judging if a subsequent data transmission to said data receiving apparatus is granted based on the authentication result and said response time.

Claim 19 (Currently Amended): A computer program ~~product having~~ <u>storage medium storing</u> computer program instructions which when executed by a computer cause the computer to perform the following steps:

generating command authentication data and response expected value data from shared data shared with a data receiving apparatus <u>and a sequence number, the sequence number indicating a position of a response request command in a sequence of response request commands to be transmitted to the data receiving apparatus</u>;

transmitting [[a]] <u>the</u> response request command to said data receiving apparatus, said response request command containing said command authentication data;

receiving a response message to said response request command from said data

receiving apparatus;

producing an authentication result for said receiving apparatus based on said response

expected value data and response authentication data in said response message received from

the data receiving apparatus;

measuring a response time between transmitting the response request command and

receiving the response message; and

judging if a subsequent data transmission to said data receiving apparatus is granted

based on the authentication result and said response time.

Claim 20 (Canceled).

Claim 21 (Currently Amended): A data receiving apparatus configured to receive

data from a data transmitting apparatus which judges whether data transmission is granted

based on a response time between sending a response request command and receiving a

response message, the data receiving apparatus comprising:

a generating unit configured to generate command expected value data and response

authentication data from shared data shared with said data transmitting apparatus and a

sequence number, the sequence number indicating a position of the response message in a

sequence of response messages to be transmitted to the data transmitting apparatus, each of

said command expected value data and said response authentication data corresponding to

authentication data in said response request command generated at said data transmitting

apparatus from said shared data;

an authenticating unit configured to produce an authentication result for said data

transmitting apparatus based on the authentication data in said response request command

and said command expected value data when said response request command is received

from said data transmitting apparatus; and

a transmission unit configured to transmit a subsequent the response message

containing said response authentication data to said data transmitting apparatus based on the

authentication result by said authenticating unit.

Claim 22 (Currently Amended): A data reception method for a data receiving

apparatus configured to receive data from a data transmitting apparatus which judges whether

data transmission is granted based on a response time between sending a response request

command and receiving a response message, the method comprising:

generating command expected value data and response authentication data from

shared data shared with said data transmitting apparatus and a sequence number, the sequence

number indicating a position of the response message in a sequence of response messages to

be transmitted to said data transmitting apparatus, each of said command expected value data

and said response authentication data corresponding to authentication data in said response

request command generated at said data transmitting apparatus from said shared data;

producing an authentication result for said data transmitting apparatus based on the

authentication data in said response request command and said command expected value data

when said response request command is received from said data transmitting apparatus; and

transmitting a subsequent the response message containing said response

authentication data to said data transmitting apparatus based on the authentication result.

Claim 23 (Currently Amended): A computer program product having storage

medium storing computer program instructions which, when executed by a computer

configured to receive data from a data transmitting apparatus which judges whether data

12

transmission is granted based on a response time between sending a response request

command and receiving a response message, causes the computer to perform the following

steps:

generating command expected value data and response authentication data from

shared data shared with said data transmitting apparatus and a sequence number, the sequence

number indicating a position of the response message in a sequence of response messages to

be transmitted to the data transmitting apparatus, each of said command expected value data

and said response authentication data corresponding to authentication data in said response

request command generated at said data transmitting apparatus from said shared data;

producing an authentication result for said data transmitting apparatus based on the

authentication data in said response request command and said command expected value data

when said response request command is received from said data transmitting apparatus; and

transmitting a subsequent the response message containing said response

authentication data to said data transmitting apparatus based on the authentication result.

Claim 24 (Canceled).

Claim 25 (Previously Presented): A communication system comprising:

a data transmitting apparatus including

a command transmission unit configured to transmit a response request command to a

data receiving apparatus,

a control unit configure to receive a response message to the response request

command from the data receiving apparatus, the response message including authentication

data based on shared data shared with said data receiving apparatus,

13

an expected value generation unit configured to generate an expected authentication

value based on the shared data,

an authentication unit configured to produce an authentication result for said data

receiving apparatus based on the expected value and said authentication data,

a measurement unit configured to measure a response time between transmitting the

response request command and receiving the response message, and

a judgment unit configured to judge if a subsequent data transmission to said data

receiving apparatus is granted based on the authentication result and the response time; and

the data receiving apparatus configured to receive data from the data transmitting

apparatus, the data receiving apparatus including

a command receiving unit configured to receive the response request

command from the data transmitting apparatus,

an authentication data generation unit configured to generate said

authentication data based on the shared data by subjecting said shared data to a

predetermined process before said response request command is received from said

data transmitting apparatus,

a response message generation unit configured to generate the response

message to said response request command before said response request command is

received from said data transmitting apparatus, said response message including said

authentication data, and

a transmission unit configured to transmit said response message to said data

transmitting apparatus when said response request command is received from said

data transmitting apparatus.

Claim 26 (Currently Amended): A communication system comprising:

an information transmitting apparatus including

an authentication data generation unit configured to generate command authentication data and response expected value data from shared data shared with a data receiving apparatus and a sequence number, the sequence number indicating a position of a response request command in a sequence of response request commands to be transmitted to said data receiving apparatus,

a command transmission unit configured to transmit [[a]] the response request command to said data receiving apparatus, said response request command containing said command authentication data,

a response reception unit configured to receive a response message to said response request command from said data receiving apparatus,

an authentication unit configured to produce an authentication result for said information receiving apparatus based on said response expected value data and response authentication data in said response message received from said data receiving apparatus,

a measurement unit configured to measure a response time between transmitting the response request command and receiving the response message, and

a judgment unit configured to judge if a subsequent data transmission to said data receiving apparatus is granted based on the authentication result and the response time; and

the data receiving apparatus configured to receive data from the data transmitting apparatus, the data receiving apparatus including

a generating unit configured to generate command expected value data and the response authentication data from the shared data, each of said command expected

value data and said response authentication data corresponding to the command

authentication data in said response request command generated at said data

transmitting apparatus from said shared data;

an authenticating unit configured to produce an authentication result for said

data transmitting apparatus based on the command authentication data in said

response request command and said command expected value data when said

response request command is received from said data transmitting apparatus; and

a transmission unit configured to transmit a subsequent the response message

containing said response authentication data to said data transmitting apparatus based

on the authentication result by said authenticating unit.